

## **REMARKS**

### **I. Claim Objections**

In the first office action dated March 24, 2005, the Examiner objected to claims 6 and 7, arguing that claims 6 and 7 are identical. The Examiner stated that one of these claims must be cancelled. The Examiner also objected to claims 17 and 18, arguing that claims 17 and 18 are identical. The Examiner stated that one of claims 17 or 18 must be cancelled.

The Applicant notes that claims 7 and 18 have been cancelled by the amendments indicated herein. The Applicant therefore respectfully requests that the aforementioned objection be withdrawn in light of such claim cancellations.

### **II. Claim Rejections - 35 USC § 102**

#### **Requirements for *Prima Facie* Anticipation**

A general definition of *prima facie* unpatentability is provided at 37 C.F.R. §1.56(b)(2)(ii):

*A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability. (emphasis added)*

"Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundsciber Corp. v. United States*, 360 F.2d 954, 960, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)), *cert. denied*, 469 U.S. 851 (1984). Thus, to anticipate the Applicant's claims, the cited reference utilized as a basis for a rejection to a claim or

set of claims under 35 U.S.C. § 102 must disclose each element recited therein. "There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

To overcome the anticipation rejection, the applicants need only demonstrate that not all elements of a *prima facie* case of anticipation have been met, *i. e.*, show that the cited reference(s) fails to disclose every element in each of the applicants' claims. "If the examination at the initial state does not produce a prima face case of unpatentability, then without more the applicant is entitled to grant of the patent." *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 1443, 1444 (Fed. Cir. 1992).

### **Wang**

The Examiner rejected claims 1 and 5-7 under 35 U.S.C. § 102(e) as being anticipated by Wang (U.S. Patent Publication No. 2003/0180445 A1). The Examiner argued that Wang discloses the claimed invention, a vapor sensing system comprising an active thermal conductivity sensor and a compensating thermal compensating (error) sensor arranged in a Wheatstone bridge circuit such that the compensating signal is subtracted from the active signal when the system is in the presence of an ignitable vapor (such as, oxygen or hydrogen). In support of this argument, the Examiner cited paragraphs 4, 17, 48, 48, and 98-100 of Wang. The Examiner additionally asserted that the sensor may measure temperature or power changes at a self-heated resistor, citing paragraphs 49-50 of Wang.

The Applicant respectfully disagrees with this assessment and notes that Wang does not teach every element and/or claim limitation of Applicant's amended claims 1 and 5-7. The Applicant submits that the foregoing arguments presented by the Examiner are rendered moot in light of the claim amendments and cancellations indicated herein. The Applicant therefore respectfully requests that

the rejection to claims 1 and 5-7 under 35 U.S.C. § 102(e) as being anticipated by Wang be withdrawn.

### **Miller**

The Examiner also rejected claims 1, 6, 7 and 9 under 35 U.S.C. § 102(b) as being anticipated by Miller (U.S. Patent No. 6,344,174 B1). The Examiner argued that Miller discloses the claimed invention, a vapor sensing system comprising an active thermal conductivity (error) sensor and a compensating thermal conductivity sensor arranged in a Wheatstone bridge circuit such that the compensating sensor signal is subtracted from the active sensor signal when the system is in the presence of an ignitable vapor. The Examiner cited lines 13+ of Miller in support of this argument. The Examiner further argued that the sensor measures temperature changes at a self-heated resistor, citing column 1, lines 29-45 of Miller. The Examiner also argued that the sensor is surrounded by a porous insulating material. The Examiner cited column 2, lines 54-55 of Miller in support of this argument.

The Applicant respectfully disagrees with this assessment and notes that Wang does not teach every element and/or claim limitation of Applicant's amended claims 1, 6, 7 and 9. The Applicant submits that the foregoing arguments presented by the Examiner are rendered moot in light of the claim amendments and cancellations indicated herein. The Applicant therefore respectfully requests that the rejection to claims 1, 6, 7 and 9 under 35 U.S.C. § 102(B) as being anticipated by Wang be withdrawn.

### **III. Claim Rejections – 35 USC § 103**

#### ***Requirements for Prima Facie Obviousness***

The obligation of the Examiner to go forward and produce reasoning and evidence in support of obviousness under 35 U.S.C. §103 is clearly defined at M.P.E.P. §2142:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

M.P.E.P. §2143 sets out the three basic criteria that a patent examiner must satisfy to establish a *prima facie* case of obviousness necessary for establishing a rejection to a claim under 35 U.S.C. §103:

1. some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
2. a reasonable expectation of success; and
3. the teaching or suggestion of all the claim limitations by the prior art reference (or references when combined).

It follows that in the absence of such a *prima facie* showing of obviousness under 35 U.S.C. §103 by the examiner (assuming there are no objections or other grounds for rejection), an Applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443 (Fed. Cir. 1992).

Thus, in order to support an obviousness rejection under 35 U.S.C. §103, the Examiner is obliged to produce evidence compelling a conclusion that each of the three aforementioned basic criteria has been met. If the Examiner fails to produce such a conclusion for each of the aforementioned criteria, the rejection must be withdrawn.

### ***Wang in view of Adachi***

Clams 2-4 and 11-19 were rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Wang (U.S. Patent Publication No. 2003/0180445 A1) in view of Adachi (US Patent No. 4,768,947).

The Examiner stated that Wang teaches the claimed invention, but admitted that Wang does not teach the use of an amplifier-processor instructing a controller to shut down a fuel fired appliance with the sensor. The Examiner argued,

however, that Adachi teaches the use of a thermal conductivity sensor sensing oxygen flow to shut down a fuel fired appliance using an amplifier and circuitry (microprocessor). The Examiner cited column 5, lines 10 through column 6, line 11 of Adachi in support of this argument.

The Examiner argued that it would have been obvious to use the appliance and circuitry taught by Adachi in the system as taught by Wang to form a burner abnormality sensing system, asserting that Adachi teaches that this enforces desirable operation of the appliance, and the sensor of Wang provides the advantage of compensation to that of Adachi.

The Applicant respectfully disagrees with this assessment and notes that Wang and/or Adachi, alone or in combination with one another, do not teach each and every element and/or claim limitation of Applicant's amended claims 2-4 and 11-19. Thus, the Examiner has failed to establish the requirements of the third prong of the aforementioned prima facie obviousness test. The Applicant also submits that the foregoing arguments presented by the Examiner are rendered moot in light of the claim amendments and cancellations indicated herein. The Applicant therefore respectfully requests that the rejection to claims 2-4 and 11-19 under 35 U.S.C. § 103 be withdrawn.

### ***Miller in view of Adachi***

Claims 2-4, 11-15, 17, 18 and 20 were rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Miller (U.S. Patent No. 6,344,174 B1) in view of Adachi (US Patent No. 4,768,947). The Examiner argued that Miller teaches the claimed invention, but admitted that Miller does not teach the use of an amplifier-microprocessor instructing a controller to shut down a fuel fired appliance associated with the sensor. The Examiner argued, however, that Adachi teaches the use of a thermal conductivity sensor sensing oxygen flow to shut down a fuel fired appliance utilizing an amplifier and circuitry (microprocessor). In support of this argument, the Examiner cited column 5, line 10 through column 6, line 11 of Adachi.

The Examiner argued that it would have been obvious to use the appliance and circuitry taught by Adachi in the system as taught by Miller to form a burner abnormality sensing system, asserting that Adachi teaches that this enforces desirable operation of the appliance, and the sensor of Miller provides the advantage of compensation to that of Adachi.

The Applicant respectfully disagrees with this assessment and notes that Miller and/or Adachi, alone or in combination with one another, do not teach each and every element and/or claim limitation of Applicant's amended claims 2-4, 11-15, 17, 18 and 20. Thus, the Examiner has failed to establish the requirements of the third prong of the aforementioned prima facie obviousness test. The Applicant also submits that the foregoing arguments presented by the Examiner are rendered moot in light of the claim amendments and cancellations indicated herein. The Applicant therefore respectfully requests that the rejection to claims 2-4, 11-15, 17, 18 and 20 under 35 U.S.C. § 103 be withdrawn.

#### **IV. Allowable Subject Matter**

The Examiner objected to claims 8, 10, and 19 as being dependent upon a rejected base claim, but indicated that claims 8, 10 and 19 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner stated that the prior art neither discloses nor fairly teaches the use of an error sensor surrounded by a membrane that specifically excludes only ignitable vapors.

The Applicant has therefore amended claim 1, such that claim incorporates all of the claim limitations of former claims 8 and 10, which have been cancelled by amendment. Similarly, the Applicant has amended claim 12 to incorporate all of the claim limitations of former claim 19 including all of the limitations of the base claim and any intervening claims. The Applicant submits that claim 1 and claim 12 are now in condition for allowance, including any dependent claims thereof.


**V. Conclusion**

The Applicant has amended the claim to more particularly disclose the invention claimed thereof. It is believed that such amendments do not constitute new matter, but are rather clarifying in nature. Additionally, it is believed that support for such amendments is provided within the specification, including the drawings, and that the specification adequately enables such amendments. In view of the foregoing discussion, the Applicant has responded to each and every rejection of the Official Action, and respectfully request that a timely Notice of Allowance be issued.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned representative to conduct an interview in an effort to expedite prosecution in connection with the present application. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call the Applicant's attorney at the below-indicated telephone number.

Respectfully submitted,

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